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## The Lavocats Turn Obstacles Into Successes

Don and Teri Lavocat grew a small, family greenhouse business into a thriving, multi-generational operation. Learn how the family turned some of its greatest challenges into victories.

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## COVER STORY

# Turning Obstacles Into Success

Don and Teri Lavocat grew a small, family greenhouse business into a thriving, multi-generational operation. Here is a glimpse into how the family turned some of its greatest challenges into victories.

By Dianne Munson

**W**ith inspiration, a passion to grow, and a lot of support from family, the Lavocats are a shining example of how to turn a small greenhouse business into a thriving greenhouse, landscape operation, and garden center in a suburb of Buffalo, NY.

Don Lavocat Sr. started a small backyard greenhouse in 1980 with his wife Teri. Now, 45 years later, the Lavocat family owns and operates a 22,000 square-foot garden center, a 44,000 square-foot growing greenhouse with a 3-acre nursery, and a successful landscape operation where three generations work, grow, and help to make the Western New York region beautiful, one garden at a time.

We talked with Chris Lavocat, now CEO and President of Growing Operations, who shared that from the start, everyone was involved. He, along with brother Don Jr. and sister Kellie, learned the business early by caring for plants in the small greenhouse.

"Helping around the greenhouse was all we knew growing up," Lavocat explains. "But my father pushed me to go to college. He wanted me to do whatever I wanted to do. So, I entered college with sights on an engineering degree that

quickly changed to finance," Lavocat says. "My goal was to wear a tie every day and work on Wall Street and, you know, be that big city banker," he says.

Lavocat quickly learned that was not for him. "I wanted more flexibility," Lavocat explains. "I was used to working with my hands. So, I came back and made a deal with my dad. I said, 'I'll take a pay cut, but I want to come back and slowly take over and take stuff off your plate,'" he explains. "I really just wanted ownership, so I had something to work for every day for my future."

Lavocat now works alongside Don Jr., President of the landscape operation, and Kellie, General Manager of the garden center. Since the second generation has been playing a larger role in the business, it's grown tenfold since 2010. But it wasn't all roses and daffodils. Like anything worth working for, there's always a little "fertilizer" in the form of obstacles that the universe throws into the mix to help us grow.

## Obstacles Overcome

**Obstacle No. 1: Finding Suppliers for an Expanding Business.** The year was 2015, and the family was ready to make the investment to expand by building a 19,000 square-foot garden center. Then it happened. They received a call from one of their long-time vendors who said he couldn't supply



Don Lavocat Sr. started a small backyard greenhouse in 1980 with wife Teri. Today, three generations of Lavocats work in the greenhouse, nursery, garden center, and landscape operation. From left: Chris, Teri, Don Sr., Kellie Lavocat Dean, and Don Lavocat Jr.

Photos: Leah Lavocat - Lavocat's Family Greenhouse & Nursery Inc.

them anymore. With a little probing, Lavocat found out that a local competitor had called that vendor, and several others, and told them they wouldn't do business with them if they supplied the Lavocats.

"I was crushed," Lavocat says. "I thought, 'This is it. We're done,'" he explains. "We were expanding from annuals and perennials to trees, shrubs, stone, and landscape products." It was a very difficult time. "I had lost all my suppliers, even those I had worked with before moving to the new location," he says.

"I started calling everyone in town and finally found other vendors that would supply to us. It was a stressful time for sure. Now we have great relationships with vendors like Ridge Manor Nursery and Prides Corner Farms. I get solicited from other nurseries all the time, but I won't leave these suppliers because they were so loyal to us early on. That experience turned into a good thing because I have really phenomenal relationships with these guys now," Lavocat says. "Looking back, that experience was a blessing, because it gave us further drive to succeed."

**Obstacle No. 2: The COVID-19 Shutdown – Impact on the Lavocat Business.** When COVID shut down pretty much everything that wasn't deemed essential in March of 2020, Lavocat explains, "I had a greenhouse full of annuals and perennials. I remember just looking around thinking, 'How am I going to sell all this if we can't be open?' I literally broke

## Tip for Success: Take Time to Recharge

Chris Lavocat strongly believes in taking time away from the business to decompress. He stresses the importance of getting away and disconnecting.

"Not taking a day off is not success to me," Lavocat explains. "I was on a vacation once reading a magazine article where all these business owners were talking about the last time they took a vacation. They were proud of not having taken a vacation or days off in years. That's not success to me," Lavocat says. "Success is having a good business and good financial status, but more so, it's having the time to enjoy your family and everything that goes with that. My immediate family and I try to take three vacations a year. And our entire family, all 18 of us, traveled to Costa Rica for a week in January. That's really the best time to get away — during the slow time. It's important to recharge."

down," he confesses. "Our business was in jeopardy, and we needed to make our loan payments. So we fast-tracked an on-line website for in-store pickup."

**Obstacle No. 3: The COVID-19 Shutdown — Impact on the Community.** COVID was difficult for everyone. When everything shut down, all businesses had inventory to sell, whether it was officially deemed essential or not. That downturn didn't stop the Lavocats from wanting to reach out to help their community. They made space for local vendors — at no charge — so farmers, crafters, and local artists could set up on some of the family's unused property. This helped local vendors while giving the Lavocats an opportunity to sell as well. It started with 50 or so vendors, and when everything opened up, they continued holding these pop-up events. They now offer



These young "Lavocat kids" from 1996 (above left: Chris on the left and Don Jr.) and Kellie in the photo on the right are now taking on major responsibilities in the family business. Below from left: Today Chris is CEO and President of Growing Operations, Don Jr. is President of Landscape Operations, and Kellie is General Manager of the Garden Center.





one in the fall, two at Christmas, and one for Valentine's Day. This year they had close to 1,000 cars for their Valentine's Day pop-up.

The result of these obstacles? The Lavocats learned that they could adapt as a business in a short amount of time, and they are stronger for it. "This gave us a level of confidence knowing that we can overcome anything," Lavocat says.

### What's Next?

This is an exciting time for the Lavocats. They've held a few small events in their garden center, including a small wedding and a children's birthday party, and they're planning to branch out into agritourism. They've also had great success with their pop-up events in the fall and then again around Christmas and Valentine's Day, and they want to continue to offer fresh ideas for their customers.

"We held my wife's baby shower in our garden center, and we're planning another wedding shower in April," Lavocat says. "We're also adding on a 5,000-square-foot pole barn that we plan to use as a gift shop and venue for

## Lavocat's Family Greenhouse and Nursery Up Close

**Owners:** Don Sr. and Teri Lavocat, Don Lavocat Jr., Chris Lavocat, and Kellie Lavocat Dean

**Location:** East Amherst, NY

**Business Makeup:** growing operations — annuals, perennials; landscaping services, and the garden center and greenhouse

**Acreage/or size:** 1 acre for crops, ½ acre for the garden center

**Customers:** mainly retail/some wholesale

**LavocatsNursery.com**

other events like small bridal and baby showers, corporate meetings, classes, etc."

### The Next Generation

Don Sr. and Teri's grandchildren range in ages from 2 to 22, so the family is now looking forward to a third generation in the business.

"While our parents still play a role in the business, and they will never retire, our goal is to eventually take over more every year," Lavocat explains. "They're always going to be here working in the business in some capacity, and that works for everybody,"

he says. "Mom works in the garden center merchandising our pottery and keeping our plants looking healthy, and Dad has been growing flowers longer than any of us, so we bounce stuff off him all the time. He's also now our resident mechanic, since none of us have that skill set. He can basically go anywhere in the business that we need him," he says. **GG**

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# It's Not Easy Being Green

The 2024 Index of Prices Paid by Growers in the Green Industry shows the need for data-based, cost structure decisions is more important now than ever with rising production costs.

By Charlie Hall

**N**ursery and greenhouse crop production has experienced increasing margin compression due to rising production costs and competitive market forces. Prior to the COVID-19 pandemic, price increases were slow, while input costs were steadily rising, leading to tighter profit margins. The pandemic amplified these challenges by disrupting supply chains and significantly increasing demand, creating inflationary pressures across the industry.

To navigate these financial challenges, growers require precise data on cost structures to inform decisions regarding pricing, SKU rationalization, and customer profitability. The Index of Prices Paid by Growers, launched in 2017 under the Your MarketMetrics program, was developed to track inflationary pressures on essential inputs used in plant production, marketing, and shipping. The index uses a weighted average approach to estimate inflation in input prices, allowing growers to make informed financial decisions.

Between 2007 and 2024, the index increased from a base value of 100 to 165.0, meaning production costs have risen by 65% over this period. Labor costs saw the most significant increase. Since the pandemic began, input costs have surged by 22.5% compared to pre-pandemic levels in 2019. Annual cost increases have varied, with the highest inflationary spike occurring between 2020 and 2022, followed by a more moderate rise in subsequent years.

This analysis focuses on the unique financial pressures faced by growers in the green industry, highlighting costs associated with plant propagation, production, and shipping. While general economic inflation indicators such as the

Producer Price Index (PPI) and Consumer Price Index (CPI) exist, they are inadequate for assessing cost trends in the green industry. Similarly, USDA's Index of Prices Paid by Farmers and Index of Prices Received by Farmers contain irrelevant data points for nursery and greenhouse growers.

To address this gap, the Index of Prices Paid by Growers provides a specialized measure incorporating major production inputs, including:

- Containers
- Soil mixes
- Propagation stock
- Plant protection products
- Fertilizers
- Fuel
- Labor
- Maintenance supplies
- Packaging materials
- Freight and shipping costs

The index is based on financial data collected from major industry growers, allowing for the calculation of a weighted cost structure. Each cost component is assigned a relative weight based on historical expense patterns.

Production-related costs account for 67.8% of total sales revenue, while general and administrative expenses (32.2%) are excluded from the index. The primary focus of this index is year-over-year (YOY) changes, as these data points help growers set pricing strategies and prepare for future cost increases.

The 2024 index stands at **165.0**, signifying a **65% increase in overall production-related costs** since 2007. Since 2019 (pre-pandemic), input costs have increased by **22.5%**. Year-over-year inflation trends include:

- 2021:** +8.1% (compared to 2020)
- 2022:** +9.5% (compared to 2021)
- 2023:** +0.5% (compared to 2022)
- 2024:** +2.5% (compared to 2023)

## Index of Prices Paid by Growers in the Green Industry (2007=100)

Cost Category	Weight	2007	2018	2019	2020	2021	2022	2023	2024	2025f
Containers & other plastics	8.90%	100.0	126.9	127.3	126.4	143.5	166.8	166.7	167.0	167.8
Media (soilless mixes)	4.37%	100.0	117.3	120.5	122.0	135.8	140.1	160.1	142.7	145.5
Propagative materials	18.97%	100.0	121.8	128.3	136.8	142.1	141.8	142.7	161.0	161.8
Plant protection products	1.629%	100.0	112.9	109.8	107.0	115.1	175.0	154.0	142.3	143.5
Fertilizers	1.626%	100.0	106.9	109.3	103.5	138.6	225.8	168.4	159.3	160.1
Labor	42.99%	100.0	136.7	144.2	149.6	158.1	169.8	179.1	185.1	194.8
Fuel & energy	4.57%	100.0	97.9	93.3	79.3	105.6	152.7	131.7	123.0	123.5
Supplies & repairs	2.95%	100.0	124.1	127.6	129.6	138.9	154.7	160.5	162.0	166.9
Freight & trucking	14.00%	100.0	130.0	130.5	124.9	138.9	151.1	136.1	131.8	134.4
Weighted Index (2007=100)		100.0	128.2	132.8	135.2	146.1	160.1	160.9	165.0	170.1
YOY Increase/Decrease		---	5.7%	3.6%	1.8%	8.1%	9.5%	0.5%	2.5%	3.1%

f = EOY forecast



The green industry saw an increase in profit margins during the pandemic, as growers raised plant prices more aggressively than in previous years. However, less than half of growers adjusted prices sufficiently to cover all input cost increases. With labor expenses continuing to rise, further cost increases are expected in the coming years.

The most significant cost increases since 2007 include labor costs, which have increased 95%, containers, which have increased 68%, and freight and trucking costs, which have increased 67%.

Labor remains the most significant financial challenge, not only in terms of wages but also in availability. Growers face rising recruitment and retention costs alongside wage inflation. Other cost categories have also increased, albeit at a slower pace.

While a preliminary estimate of rising costs in 2025 is presented here, the annual forecast for 2026 was initially planned, but data limitations and uncertainty regarding upcoming trade policy measures (e.g., tariffs and retaliatory actions) have led to a delay in projections until the Summer Supplement is released in June 2025. This will allow for more precise forecasting ahead of industry trade shows and pricing negotiations for 2026.

### Implications for Growers

- **Customized Indexing:** Since costs vary by region, growers should develop their own cost-tracking models. Your

MarketMetrics provides a customizable spreadsheet for this purpose.

- **Managing Margin Compression:** The findings emphasize the growing cost-price squeeze, with inflationary pressures likely to persist.
- **Pricing Strategy:** Total costs establish the price floor, while consumer willingness-to-pay determines the ceiling. Growers must balance these factors to maintain profitability.
- **Long-Term Sustainability:** The industry must continue adjusting prices to keep pace with rising input costs. However, growers should remain cautious of demand elasticity — higher prices may impact consumer willingness to buy plants.

The Index of Prices Paid by Growers is an essential tool for tracking cost inflation in the green industry. With production costs rising 65% since 2007 and inflationary pressures continuing, growers must strategically adjust pricing models to maintain margins. Labor remains the most significant expense driver, and cost increases are expected to persist in the coming years. By leveraging data-driven decision-making, industry players can better navigate financial challenges and sustain profitability.



For the complete analysis, go to the AmericanHort Knowledge Center at [AmericanHort.org/resources](https://AmericanHort.org/resources). **GG**

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## PRODUCTION

# Growing Media: Tariffs, Trends, and Trajectories

One prominent North Carolina State University expert offers the most up-to-date information available on growing media.

By Dr. Brian E. Jackson

**G**rowing media (substrates) are often described as having some functionally static (lacking in movement, action, or change) physical properties as well as some dynamic (having constant change, activity, or progress) chemical and biological properties. As I look across the industry landscape today, it seems fitting that “dynamic” is a good way to summarize the ongoing movements, trends, innovations, and uncertainties facing the growing media market.

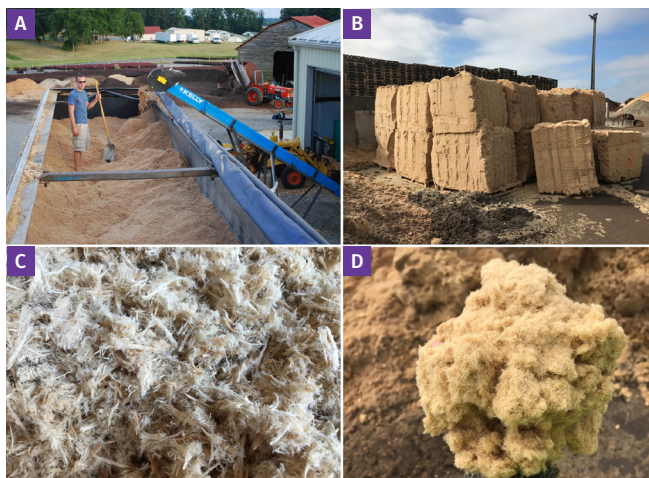
Let’s begin by addressing the elephant in the room — the tariffs recently imposed on imports from Canada and Mexico. There are others, but for now let’s focus on our neighbors. The U.S imports 85%+ of the annual Canadian peat extracted, peat that is then used to grow horticultural crops, products, and services with an estimated annual half-a-trillion-dollar economic impact. So, this is concerning on both sides of the border.

AmericanHort and many other industry allies have advocated for Canadian peat moss (and all peat-based products) to be excluded from these tariffs or be granted “critical mineral status” to reduce the tariff rate to 10%.

Regarding Mexico, while not as significant, there are substrate products, namely coconut coir, that is imported and will also face any tariffs imposed. When this article is published the situation may likely be very different. Time will tell.

While on the topic of peat and coconut coir, here are a few non-tariff related updates.

As reported by the Canadian Sphagnum Peat Moss Association, the peat harvest in Canada during the 2024



**Figure 1.** Wood substrate raw material offerings can include (A) bulk/loose material, or (B) compressed bales with most fiber products being (C) extruded or (D) disc-fined. Photos: Brian Jackson

extraction season was quite good, and much improved compared with 2023 due to more favorable weather conditions for harvesting.

This is excellent news, as peat remains the backbone of soil-less growing media and is critical to our industry. Coconut coir supply, availability, and cost has seemingly ebbed and flowed over the past year in many areas. While not all coir suppliers or buyers have been affected, many have.

Based on information I have received, the cost of coir in some locations has increased 60% to 70% compared to January 2024 prices. Some coir suppliers in India and Sri Lanka have reported a 30% to 40% reduction in production. The main reasons for the supply and cost shifts are due to several evolving

factors, including: severe monsoons that affected the areas of coconut production in recent months; the significant demand of coir substrates by China, which may be at historical levels; and also due to the overall increased use/demand for coir globally as the most used organic substrate behind peat. Other critical substrates (e.g., perlite, vermiculite, stone wool, pumice, etc.) seem to be in good shape.

## Trending Developments

Growing media manufacturers in the peat, coir, perlite, stone wool, floral foam, stabilized media/plugs, compost, biochar, etc. markets continue to innovate, offer new products, develop and implement sustainability practices, and work to meet the needs of their consumers. Many of these were on display at IPM Essen and Indoor Ag-Con earlier this year.

Some specific developments with wood fiber substrates also have been occurring. New



**Figure 2.** Steaming or heating during or after processing of some organic substrates is an important step in preconditioning materials before use.



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companies and products are now on the market, both domestically produced and imported from Canada and Europe (see Fig. 1 on page 10). In the past two years, three new wood substrate producers are now selling in certain areas of the U.S. As I have alluded to in the past, even more are coming in the near future. Other than the continually shown feasibility of growing crops in substrates containing wood (though there are still challenges for sure), one of the other driving forces behind the increase in wood fiber production has been in-part due to new players in the game.

As the forestry industry (pulp and paper) have witnessed a decline in operations nationwide, there are some forestry and wood product companies that are eyeing the horticulture sector as a possible entry point for new uses of currently underutilized or low-market-value forest materials. These companies are bringing their expertise in different wood processing technologies and their understanding of wood engineering, manipulation, chemistry, etc. to advance what we know about wood fiber and how we can better use it.

This surge in processing technology is also true for biochar production and other non-wood biomass materials. Other groups interested in entering the growing media market with new materials or existing materials (wood) have recently completed economic feasibility studies to assess the potential of also entering the market.

Growers across the U.S. also are continuing to trial many different substrate materials that are found locally in their production locations, with several of them aiming to begin sourcing and making their own substrate materials for in-house use.

Another area of interest for many growers (mainly food crops) who are using or considering the use of wood fiber is the cleanliness or sterile condition of the materials. Most commercial wood products on the market today are manufactured in machines that generate high heat (from friction), steam, and pressure (Fig. 2A-B on page 10). Those conditions do help to sterilize, at least temporarily, the wood fiber and remove some wood chemicals that would otherwise be harmful to plant growth. Most wood-refining machines reach temps above 100°C.

How — and to what extent exactly — these temperatures modify the wood is still being investigated, but we are aware that high heat can have beneficial effects on other organic materials like aged/composted bark (Fig. 2C). Some growers who have learned to successfully grow crops in substrates with higher (~50%) wood fiber inclusion have since backed off to lower percentages due to the observed decreased post-production shelf life (wilting) of plants once at retail.

### Research Directions

Domestic and global research efforts have ramped up substantially over recent years, even more so now due to the many (continuing) challenges and industry shifts we are experiencing relating to growing media. It's fair to say that federally/publicly funded R&D in other countries (particularly Europe) far exceeded that here in the U.S. since the pandemic. That, however, has recently changed — with great justification and support — and the timing could not be better! Organizations



**Figure 3. Investigating how to grow crops in 100% wood (or other non-peat material) continues to be a focus for many researchers and growers.**

including the American Floral Endowment, HRI, the Gloeckner Foundation, and others have led the way in recognizing the critical need for supporting research in developing/improving substrates for the horticulture industry in the U.S.

Additionally, in the fall of 2024, a team of scientists were awarded a five-year USDA Specialty Crop Research Initiative grant solely focusing on substrate sourcing, engineering, development, and management in the U.S. The grant, known as Soilless Substrate Science, will support novel research, both applied and foundational, to help (with industry partners) better invent and secure the future of soilless growing media.

Among the current research initiatives being investigated that my lab has been focusing on primarily revolve around the continued development of forest-based (wood) substrate development and use. We have been resurrecting research from 2004 to 2010 that investigated the potential to grow crops in 100% wood substrates (Fig. 3).

It may seem crazy I know, but it is possible! Of the different types of wood fiber on the market, some can be formulated (100%) into compressed blocks and slabs with success in the greenhouse vegetable, strawberry, and cannabis markets. When used as loose-fill substrates, not all fiber types have the structure to be used at high percentages due to pot filling issues, slumpage, or compaction.

Our focus on growing in 100% wood is only with hammer-milled substrate products that have the structure allowing this to more easily be feasible. Other areas of research include a broader evaluation of conifer species across North America (eight in total) as well as renewed interest in how hardwood trees/materials can be manipulated and used successfully as substrates.

Preconditioning wood fiber to remove harmful chemistries, understanding the effect of harvest season on wood fiber quality, irrigation and improved post-production shelf life of plants grown in wood, pH, and nutrition projects round out some of the main areas of current work. **CG**



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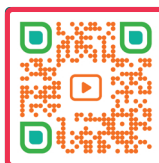
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## VARIETIES

# Check Out What's Happening in Mums

Research has given the industry exciting varieties offering new and longer color, new shapes, and more durability in shipment.

By Andy Wilcox

I'm a sucker for mums each fall and can't resist bringing home a load every year. So, asking industry folks what new mum developments are coming to market was a treat, especially as they introduce new shapes, expanded families of mums, and even more flower and color longevity.

### Longer Color, Longer Blooms

People love a good value, and mums that hold their color longer and hold their blooms longer are in focus by breeders and sellers. Expect to see better performance on the shelf for consumers.

"There's nothing worse than bringing a mum home, and it immediately fades," says Jessie McMillin, Chrysanthemum Product Manager for Ball Horticultural Company. "I'm looking for varieties where the color stays for a long time." She adds that not only does the end consumer appreciate it, but the predictable and reliable color longevity also makes it easier on growers.

Older varieties of mums often faded, shifting from a brilliant red to a faded red or even pink after a couple of weeks. But breeders are achieving longer color hold, and improved flower retention. Alicain Carlson, Ph.D., Head of Marketing - Americas at Syngenta Flowers, talks about their efforts.

"We're focusing heavily on color and longevity — specifically, improving the performance of mums for the end consumer. Our goal is to ensure mums retain their color for longer and stay true to the color they were when purchased. For example, if you buy a red mum, we want it to stay as close to red as possible without fading to orange or pink. We're working on improving both color retention and flower longevity to address these issues."

While it may seem there would be no new colors under the sun for chrysanthemums, that's not exactly true.

"We're expanding beyond the traditional colors of white, yellow, and red. Yellow remains the most popular color. People love yellow mums. So we have a yellow variety for every timing



Syngenta is expanding beyond the traditional colors of white, yellow, and red. Check out this 'Pamela Pink'. Photo: Syngenta Flowers



This 'Metrona Bronze' from Ball Seed is a standout among new colors this year. Photo: Mark Widhalm/Ball Seed

and response week, from early to mid- and late-season options. But we're also exploring more bronzes and bi-colors. These shades work beautifully in combinations and are great on their own as well, especially for retail programs," Carlson says.

### Expanding the Families

Look at a product catalog and the sheer number of mums can seem overwhelming, especially when selecting a variety to add to your program. But breeders have been working to expand mum families, bringing more colors to named families and making it easier for growers to add a new genetic package to their lineup.

"We are focusing more on adding families to our product line. If you're a grower looking to add new mums, families are the easiest way to bring new genetics into your program," McMillin says. A family will nominally have between four and seven colors, blooms at the same time, and has consistent form and vigor, simplifying planning and eliminating guesswork when making mixed pots. Any group of two, three, or four mums in the same family should make a great combination. "People are really going to notice more organization with families instead of a bunch of random, stand-alone varieties."

Adding more colors to mum families means creating color combinations gets easier, and they're big sellers.

"Combos are a big focus with mums, especially tricolor combinations where all the habits match and the colors grow together nicely," says Carlson.

"At Syngenta, we have mum families, like our Pamela and Jacqueline families. Within these families, all the mums share similar habits and timings, allowing them to be mixed together seamlessly. We're also introducing new colors within these families to expand the possibilities."

Continued ▶





# SOLLUM®

## Thinking about a new greenhouse or about updating your lighting?

A conversation with Matthew Bonavita,  
Vice President of US Sales at Sollum Technologies



**Matthew, what is Sollum's edge in the greenhouse lighting market?**

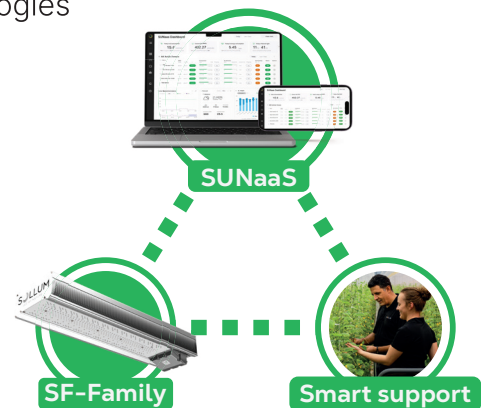
Sollum® designed the only fully dynamic LED lighting solution for greenhouses that adapts to any installation, crop and

varieties at each stage of their growth. Light recipes are programmable and reprogrammable on site on our proprietary SUN as a Service® platform, which means that you can change crops without having to invest more money in technology. Other lighting systems are programmed at the factory and cannot adapt from growing tomatoes to mini cucumbers, for example.

Our family of grow lights provide the necessary power and colours to grow any crops in any type of greenhouse. Add to our fixtures and cloud platform support to install your lighting, a team of technicians and agronomists to help you plan and answer your questions, and you have the most complete system to ensure your success. And it integrates with climate controls and other systems in your greenhouse seamlessly. That's why we call it a solution.

**We're starting to hear about dynamic LED lighting and Sollum uses the term too. What does it mean?**

Did you know that Sollum coined the word dynamic? It means that the SUN as a Service platform can modify the spectrum, intensity and photoperiod of our family of fixtures, i.e. dim the lights automatically to maintain the light recipe at all times based on ambient light readings from sensors in the fixtures. Crops receive, at all times, the right amount and quality of light they need to grow, which leads to amazing results in higher productivity and energy saved.



In addition, our LED lighting solution offers unparalleled levels of flexibility. You can program an unlimited number of light recipes on site, and you can also set up distinct grow zones to cultivate multiple crops or varieties, each lit with their very own light recipe. If you do not cultivate in one zone, you can just turn the lights off to save energy. It's that simple.

**Simple is good, there's so much to follow up on in a greenhouse. But it sounds complicated when you talk about family of fixtures, cloud platform, programming, setting up grow zones. Do you help?**

Simple is what we offer at Sollum, a user-friendly solution thanks to the dashboard of our SUN as a Service platform where you can pick light recipes and set up grow zones in three steps. It is managed from your computer, monitors the health of your solution 24/7 and provides all the data you need to maximize crop productivity and, tools to control your power usage. We have a team to train and support you, and you can also pick the level of support that you need over time. We're that flexible.



**Want to know more?**

Contact Matthew at +1 (919) 413 0365

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## VARIETIES

### Shipping and Durability

Unless you're growing it right where you sell it, you'll need to move or ship mums, and that can come with problems. Older mum varieties often had problems with splitting, making them unsellable at the destination. McMillin explains the lengths she goes to during trialing to prevent those problems.

"I want mums to perform predictably — no getting out of control, no issues with splitting. We're looking for a flexible mum that can handle being transported on a truck without collapsing during delivery."

But how does one test a mum for durability? "One of the more fun parts of trialing is our durability tests. I'll pick up a mum about chest height and drop it. Then I ask, 'Did it survive?' I also do a wiggle test, which customers always love. I kneel down, wiggle the whole mum, and you can tell pretty quickly if it's strong or if it's a bad one," she explains. "They can split right down the middle if they're not strong enough. It's one of the major things I test for. I wiggle all the mums." My high school guidance counselor never told me about *that* job, and I'm a bit mad about it.

### Hot New Mums

It wouldn't be an article about what's new with mums if we didn't have a section about new varieties. New colors and new shapes are coming soon.

"We have several exciting new mums in the pipeline," McMillin tells us. "One standout is 'Metrona Bronze', a stunning new commercial variety for this year. It resembles a burning coal, but with a beautiful European shape and super flexibility, making it easy to ship. The mum features a vibrant neon yellow center surrounded by a bright red halo. It will be an eye-catcher for growers."

They're also introducing two new whites: 'Astral White', one of their earliest-blooming varieties, and 'Paper White', a mid-blooming variety with large, stunning blooms. A second bronze mum, 'Sweet Potato Pie', offers a gorgeous orangey bronze tone and a perfect European shape.

Bronze might be the new yellow for mums, and Syngenta is also bringing a new one to market.

"Our 'Melanie Bronze' bi-color is a standout. It mixes well in combos and has a unique look compared to a straightforward, clear color," Carlson says. But she says it's not just new colors but new ways of displaying mums to get customers' attention.

"Combining mums with other species is one of the most interesting aspects for me. We've paired mums with ornamental kale and snapdragons, gaillardia, marigolds, coleus, and even zinnias. Consumers love that vigorous growth because it's fun and lively. That's what I'll be talking to everyone about at



Combining mums with other species offers interest. Here, Syngenta has paired mums with marigolds for a pop of fall color. Photo: Syngenta Flowers



Dr. Neil Anderson, Professor and Department Head from the University of Minnesota, crossing chrysanthemums. Photo: Alicia McCann, University of Minnesota Dept. of Horticultural Science

California Spring Trials this year: mums and how to create exciting combinations."

How about a new mum that isn't a mound or ball shape? That's precisely what Dr. Neil Anderson, Professor and Department Head from the University of Minnesota, is talking about. Their chrysanthemum breeding program is one of the world's oldest public-sector breeding programs and the only one in North America.

"Groundcover types, which we call Magic Carpets, grow horizontally. They typically stay very low to the ground, reaching only a few inches in height — maybe up to 5 or 6 inches when they're in flower. They form a carpet of flowers in the fall and are ideal for use in hanging baskets, containers, or at the front of landscape beds," Anderson says.

Flowering in late summer and early fall, just like traditional garden mums, these plants have been in the works for quite some time but will be released in the near future, perhaps as early as next year. "This concept actually goes back several decades. We noticed this unique trait right around the time the 'Purple Wave' petunia had just come out. I was working at PanAmerican Seed back then and was very familiar with both the challenges and the economic impact of the Wave series. It revolutionized how petunias were used. I think the Magic Carpet series could have a similarly transformative effect on the chrysanthemum market," Anderson explains. The first release will be a white variety, but the series will have all the colors.

GG



**Andy Wilcox** is a flower farmer and freelance writer with a passion for soil health, small producers, forestry, and horticulture. He and his partner run Stone's Throw Flowers, providing cut flower arrangements to retail and wholesale customers. Andy is an active member of the Farmer Veteran Coalition of Wisconsin. [andy@thatgardenwriterguy.com](mailto:andy@thatgardenwriterguy.com)



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DR. A UNCHAINED

# Let's Put Natives and Nativars in Perspective



**Monarda 'Balmy Pink' is a nativar, meaning it is cultivated from a man-made cross.**

Photos: Allan Armitage



**Allan Armitage**

is a statesman of the industry, as a contributor to *Greenhouse Grower* since 1984, a groundbreaker in variety trials, a breeder, and a Professor in the Department of Horticulture at the University of Georgia for 30 years. Follow Dr. A on Facebook at @ArmitageAllan, and download his "Armitage's Great Garden Plants" app in the App Store. [armitage@meistermedia.com](mailto:armitage@meistermedia.com)

It seems everyone has an opinion about plants we broadly call natives and nativars. Landscapers, designers, installers, and those who sell perennials, shrubs, and trees have become particularly enamored. And why not? The term native has become an established trend, and the plants have become an important piece of the marketplace.

But there is a ton of confusion out there. People are puzzled about the differences between native, nativars, invasive plants, aggressive plants, and even naturalized plants. We may bandy these terms about, but please believe me, most people don't really know what we are talking about.

When we talk to the landscape/gardening community (and to each other), we must be sensitive to the misunderstandings. When my neighbor hears that a plant may be invasive, the knee jerk response is to shut down. On the other hand, let them know it is a native, and they want to hear more.

So, we should get these things somewhat correct or at least stay out of trouble by not giving wrong information.

## Native

The definition of native is fluid. Most people tend to accept the broad definition that a native plant grew wild in a particular region prior to settlement by Europeans.

Another less-restrictive definition states that native plants occur within a region as a result of natural processes (e.g., birds and weather events) rather than human intervention. They both cite the importance of region (i.e., a plant native to the Southeast may not be native to the Midwest), but the original defines a specific time frame while the latter suggests that natural processes can and do alter the native landscape.

Therefore, the list of what is native may change over time.

## Nativar

Many naturally occurring hybrids can be found in the wild. For example, natural crosses of a white and red flower may produce a pink form of a native species. These are referred to as varieties and, for all intents and purposes, can be considered native.

But, when a breeder crosses a red and white form of a native species, this man-made form is a nativar. There is absolutely no way that, according to these accepted definitions, a nativar can be considered native.

However, the claims that nativars result in a decline of pollinators compared to the species is simply not confirmed by research. In fact, some are far better attractors than the species from which they are crossed.

So, to stay out of trouble, sell the new fancy monarda as a nativar, but not as a native. And don't apologize to the pollinators.

## Invasive vs. Aggressive

There is no excuse for anyone to be selling plants invasive to the region to anyone. Lists of invasives are readily available. So selling yellow flag iris or Japanese privet or Asian wisteria makes us all look bad.



**Asian wisteria is invasive (originally from Asia) and escaped here in Athens, GA.**



**This native ajuga is aggressive and growing out of bounds, but it is not considered invasive.**

Continued ►





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## DR. A UNCHAINED

However, people confuse aggressive with invasive, and that hurts us just as much. An aggressive plant is just that, it is aggressive in the garden. Thyme, culinary sage, or ajuga may not be good choices for gardeners/landscapers; they may curse the day they bought them. However, they are not invading the woodlands or pastures.

Good grief, that is why we love groundcovers — they cover the ground. Do not let your staff



These bachelor's buttons are naturalized, meaning they are non-native but have adapted to their environment here in Athens, GA.



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be intimidated by someone getting upset because *Sedum* 'Angelina' is too successful. It is aggressive, not always invasive.

#### Naturalized

Lastly, allow me to mention the other elephant in the room, naturalized plants. We don't get many questions about these because we don't really sell a lot of them. But, we should understand that some non-native plants have evolved and adapted to their new environments along roadways, in turf, or even in meadows.

They are so common (but not always invasive) that they have become more or less accepted as native. That they take the place of native plants is obvious, but they do not have the same negative connotation as invasive. Kudzu and privet are invasive, forget-me-nots and bachelor's buttons not so much.

In fact, some reports suggest that plants that are considered naturalized (but not invasive) may find their way on native plant lists. Personally, I don't agree that dandelions, teasel, dame's rocket, or mullein be considered native, ever.

Lastly, this whole native/nativar movement has been a benefit to sales and opened the floodgates for discussions about pollinators and invasives — all good things. But, oh my, there is so much more in our plant cupboards than natives. Let's not get boring — let's shout out for diversity!

GG





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## TECHNOLOGY

# Environmental Controls: They're Not Just for the Big Guys

Industry leaders discuss what's new and how to take advantage of what these systems have to offer, regardless of the size of your operation.

By Andy Wilcox

**T**he big players get to try the fancy toys first. They've got the bandwidth for it. But tools only available for the largest operations a year or two ago are now scaled for the rest. Small- and mid-sized growers can now use cutting-edge tech, especially for environmental controls. And the tech companies want to hear from you.

"While we're known for high-tech solutions for large operations, we also offer competitive solutions that are very effective and easy to use for small- and mid-sized growers. For example, entry-level greenhouse control systems including sensors to control lighting, vents, irrigation, and weather monitoring can start around \$6,000 while still offering robust features like online connectivity and modular expansion," says Henry Vangameren, Regional Marketing Manager Americas at Priva.

"We have solutions tailored for both large-scale and small- to medium-sized growers. Our core solution is the IIVO system, which includes all the bells and whistles — intelligent algorithms, full automation, and advanced features," says Luis Trujillo, President Hoogendoorn USA. There's a version for medium-sized growers, too. "For medium-sized growers, we offer the IIVO Compact. It's a scaled-down version of our flagship system but still highly effective. We've recently upgraded it with new features that make it even more appealing for this segment."

Many growers assume that big greenhouse tech companies only cater to large-scale operations, but that's not the case anymore. "More sensors for leaf temperature, vapor pressure deficit, and soil moisture are being used by growers to make data-driven decisions on climate and irrigation practices. Even smaller environmental control companies are incorporating these sensors into their offerings," says Taylor Readyhough, BioTherm Northeastern Sales Rep. With premium products and tech aimed at small- to mid-sized growers, it might be time to take another look.

## Autonomous Growing

It seems you can't order a cup of coffee anymore without interfacing with a computer screen, but the fascination with AI (artificial intelligence) in the greenhouse isn't going away. Maybe it's because of labor or shiny new plant disease, as an old farmer I once knew described it, but the new computer-aided environmental controls are here to stay.

"I think the biggest trend, of course, is AI and autonomous growing. Everybody is talking about it. Everybody is asking about it. A lot of people are keeping their finger on the pulse," Vangameren says.



**Priva PIM (Priva Irrigation Measurement) offers precision irrigation strategies based on real-time insights of plant transpiration, EC, and pH for better crop quality.** Photo: Priva

He sees the transition toward AI-driven systems being pushed by the need to grow more crops with fewer people. "Many experienced growers and specialists are retiring, taking decades of knowledge with them. There aren't enough young professionals entering the industry to replace them. The newer generation of growers is also looking for ways to run their businesses differently — more efficiently and with less time commitment than their predecessors," Vangameren explains.

Mom and dad ran this business, and it was their entire life. They worked 80 to 90 hours per week, never had a weekend off, and couldn't take a vacation. Now, I'm running the business, but that's not how I want my life to look. It's a common change that is driving many businesses to look toward more modern ways of managing their operations. From automating environmental controls to remote imaging for pest scouting and RFID (Radio Frequency Identification) trackers for inventory, new greenhouse tech is changing how many businesses are run.

Experienced growers are retiring and taking that corporate knowledge with them. How is it going to be transferred or kept?

"The biggest pain points for growers are people, water, and time. With intelligent algorithms, growers can now manage twice the surface area they used to while reducing water usage and fertilizer costs," Trujillo explains. Monitoring happens in real time, enabling the grower to make more informed decisions faster with the predictive strategies built into the systems.

## Anticipating Environmental Conditions

A greenhouse exists and interacts with the physical conditions surrounding it: cold snaps, storms, heat waves, and



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cloudy days. The weather outside a greenhouse directly affects conditions under the glass. And reacting to those conditions can be a full-time job. Farmers always watch the weather, but a greenhouse grower can be obsessed with it. Perhaps one of the biggest changes in how environmental systems are controlled is the shift toward being predictive rather than reactive.

“Traditional systems were reactive. They turned heaters on or opened vents based on immediate conditions,” Vangameren says. He explains that today’s systems use predictive algorithms to anticipate changes days in advance, optimizing energy use, water management, and crop health while enabling better labor and resource planning. The theme now is predictive and scalable cultivation.

Alejandro Mejia, Service Manager and IA Specialist at Hoogendoorn, explains how it works.

“Our systems incorporate predictive strategies using advanced forecasting tools. For example, they analyze external conditions to create a three-day strategy that proactively adjusts temperature profiles and other parameters rather than reactively. This approach helps growers achieve better results while reducing manual intervention.”

Mejia says their systems also integrate local weather forecasts with real-time data from sensors installed at the greenhouse site. These sensors validate forecasts and fine-tune decisions based on actual conditions.

The three inputs of forecasts, external sensors, and internal sensors are all blended and synthesized using AI. He explains

that intelligent algorithms analyze all this data so growers don’t have to interpret graphs manually or rely solely on sensors that might fail or be calibrated incorrectly. The system cross-checks calculated insights with sensor data to ensure accuracy.

### More Focus on Grower Support

When asked what makes growers tear their hair out, both Vangameren and Trujillo mention support after the sale or the lack of it.

“Implementation is key here — not just selling the product but providing full-service solutions,” Trujillo says. “For instance, in the U.S., we’ve partnered with TC Control to ensure we have the staff and resources to handle installations and commissioning efficiently.” Choosing these new high-tech systems isn’t like the old days of buying a software program and installing it yourself.

“Support is key,” Vangameren explains. “You can have the best technology in the world, but without proper support, customers won’t be happy. Growers often call us first — even for issues unrelated to our system — because they trust us to help solve problems quickly. Our open platform also sets us apart; it allows easy integration with new and emerging technologies, unlike some closed systems on the market.” **GG**



**Andy Wilcox** is a flower farmer and freelance writer with a passion for soil health, small producers, forestry, and horticulture. He and his partner run Stone’s Throw Flowers, providing cut flower arrangements to retail and wholesale customers. Andy is an active member of the Farmer Veteran Coalition of Wisconsin. [andy@thatgardenwriterguy.com](mailto:andy@thatgardenwriterguy.com)

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Brian D. Sparks is Editor of *Greenhouse Grower*. He is responsible for developing print and digital content and editorial planning, with a focus on greenhouse technology and production. Brian has been with Meister Media Worldwide since 2000 and was previously Managing Editor for several Meister brands. He has a communications degree from John Carroll University.



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## EDITORIAL

# Why The Future of Horticulture Research Is at Stake

Our team at *Greenhouse Grower*, along with the entire editorial team at Meister Media Worldwide and our family of specialty crop brands, has been tracking the policies, executive orders, and other actions being taken by the Trump administration. Our aim is not to speculate (not too much at least, even though some forward-looking analysis is necessary), but rather to highlight the actual implications — both short and long term — that these decisions are having on all segments of the horticulture industry.

One of the issues we're closely following is staffing cuts and grant freezes taking place in federal agriculture programs. In March, I had a conversation with an individual who chose to remain anonymous but works at a land grant university and is involved in horticulture. Below, this person shares their thoughts on how universities are currently being affected by funding cuts, as well as the long-term implications.

"I would say that the biggest thing right now is there's a high level of uncertainty in the university setting, especially at land grant universities. Hatch funds and Smith-Lever funds are the backbone of funding for ag colleges, and there's a lot of questions around the future of that funding, which is nerve-racking. We're waiting to hear what's next.

"When it comes to grants getting canceled, I don't have any that have gotten canceled, but I do have peers in allied departments who have had at least one grant cut. For the most part, we're not offering DEI-focused horticulture grants, which may have kept us off the radar.

"I will say the layoffs at USDA have affected one of the centers that we partner with. They've lost employees, and I know that's creating stress for them. It's also creating a backlog for us to get results back from them.

"When it comes to grant access, I think that's going to be where we see the real impacts, because I believe there's going to be reduced funding opportunities in the future. The landscape is going to change, and that's the thing I'm really worried about. These cuts in USDA researchers and funding are not going to hit our industry next year. But 10 years down the line, without that research and technical support, that's when we're going to be lagging. While these cuts are being made, some people might be saying, 'My life doesn't feel different today.' But when we fast forward a decade, our rate of progress will be much slower or will have stopped.

"I think right now is a good time for growers to be contacting their Congressional delegation, because I'm real nervous for the future of land grant universities. The vast majority of horticulture programs are at the land grant universities. There's no backup universities or backup programs if we lose them. It's not like horticulture is a major that you find at every university. We're already a small minority relative to programs across universities. And some of the recruitment tools we get to support new entrants into horticulture are becoming more scarce, or at least we are anticipating them becoming scarcer.

"When I was getting my degree, I thought I was doing a public service, something to be proud of. Faculty members are now seen as pariahs for supposedly indoctrinating students. Personal politics aside, we don't do any of that in horticulture. We're talking about managing substrates and fertilizer, or using plant growth regulators and biological control, or controlling temperature and lighting in your greenhouse." **GG**

*Brian D. Sparks*



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